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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/750,045 | 12/30/2003 | Justin K. Brask | 42P17528 | 9152 |

7590

11/21/2006

Michael A. Bernadicou
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
Seventh Floor
12400 Wilshire Boulevard
Los Angeles, CA 90025

EXAMINER

WEISS, HOWARD

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 11/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/750,045 | BRASK, JUSTIN K. | |
| | Examiner | Art Unit | |
| | Howard Weiss | 2814 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16, 20-22 and 26-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26-28 is/are allowed.
- 6) ☒ Claim(s) 1-16 and 20-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Attorney's Docket Number: 42P17528

Filing Date: 12/30/03

Continuing Data: none

Claimed Foreign Priority Date: none

Applicant(s): Brask

Examiner: Howard Weiss

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 to 4, 6 to 8, 11 to 16 and 20 to 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Wu et al. (U.S. Patent No. 6,309,975).

Wu et al. show all aspects of the instant invention (e.g. Figures 1 to 6 and Column 35 Line 1 to Column 40 Line 43) including:

- forming a polycrystalline silicon film **14** with first atoms in a first region and a second region **30**
- said film can have either a degenerate lattice (when intrinsic) or non-degenerate (i.e. when lightly doped; Column 35 Lines 26 to 33)
- forming a mask **16** with an opening formed over said first region and covering said second region (The figure only shows a limited part of the mask. The opening would be between the part of the mask shown and that part not shown. For example, see Figures 69 and 70)
- implanting dopants **18** through said opening and removing said mask
- said dopants can be electrically neutral (Column 39 Lines 26 and 27) or conductive (i.e. boron; Column 39 Lines 1 to 6) and can be smaller or larger than the first atoms (i.e. Si) depending on the choice of dopants (e.g. Group IIIA or VA elements)

- heating the polycrystalline silicon film to activate said dopants and forming an non-degenerate lattice in said first region
- exposing the first and second regions to a wet, hydroxide etchant of pH between 9 and 11 which etches said second but not the first region

In reference to the claim language pertaining to the forming of a non-degenerate lattice, lattice energy activation barrier and other features, the claiming of a new use, new function, or unknown property that is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 195 USPQ 430, 433 (CCPA 1977) and *In re Swinehart*, 439 F. 2d 210, 169 USPQ 226 (CCPA 1971); please see MPEP § 2112. Since Wu et al. show all the features of the claimed invention, these features and properties of the doped and non-doped regions are an inherent property of Wu et al.'s invention.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. and Nihonmatsu et al. (U.S. Patent No. 6,346,485).

Wu et al. shows most aspects of the instant invention (Paragraph 2) except for the crystalline being GaAs or InSb and an acid etchant. Nihonmatsu et al. teach the equivalence of silicon and GaAs or InP (Column 16 Lines 1 to 6) the use of an acid etchant to prevent contamination and control flatness (Column 9 Lines 9 to 17). It would have been obvious to a person of ordinary skill in the art at the time of invention the crystalline being GaAs or InSb and an acid etchant as taught by

Nihonmatsu et al. in the process of Wu et al. to prevent contamination and control flatness.

Allowable Subject Matter

5. Claims 26 to 28 are allowed.
6. The following is a statement of reasons for the indication of allowable subject matter: a method of forming gate electrodes of different work functions as claimed including using sacrificial gate electrode material of different etchant reactions could not be anticipated nor, in combination, be rendered obvious over the prior art of record.

Response to Arguments

7. Applicant's arguments filed 9/29/2006 have been fully considered but they are not persuasive. The Applicant states that Wu et al. show the implanted first region being etched away leaving the non-implanted second region un-etched. However, the non-implanted second region of Wu et al. **30** is clearly shown etched away (see Figures 4 and 6) while leaving the first region (that part of **14** not region **30**) un-etched. In view of these reasons and those set forth in the present office action, the rejections of the stated claims stand.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing

date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

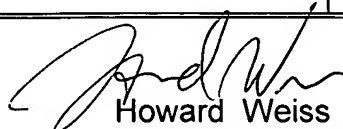
9. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(571) 273-8300**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications.
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(571) 272-1720** and between the hours of 7:00 AM to 3:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via Howard.Weiss@uspto.gov. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy, can be reached on **(571) 272-1705**.
11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).

Art Unit: 2814

12. The following list is the Examiner's field of search for the present Office Action:

| Field of Search | Date |
|--|-----------------|
| U.S. Class / Subclass(es): 438/ 753, 924 | thru 11/13/2006 |
| Other Documentation: none | |
| Electronic Database(s): EAST | thru 11/13/2006 |

HW/hw
13 November 2006


Howard Weiss
Primary Examiner
Art Unit 2814